

# Notice of Allowability

Application No.

10/555,304

Examiner

Juanita D. Stephens

Applicant(s)

FURUKAWA, TATSUO

Art Unit

2853

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed 12/21/2006.
2. ☒ The allowed claim(s) is/are 1 and 3-18.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 5/24/06 and 12/21/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 12/21/2006 has been entered.

### ***Information Disclosure Statement***

2. Acknowledgement is made of the Information Disclosure Statement filed 5/24/2006 and 12/21/2006.

### ***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Allowable Subject Matter***

4. Claims 1, 2-18 are allowed.

5. The following is an examiner's statement of reasons for allowance:

The prior art does not disclose, suggest or render obvious the combination of a logic circuit for outputting a block selection signal and an element driving signal, which is for each electrothermal transducer in a selected block, at a second voltage amplitude level based upon an input signal of a first voltage amplitude level, the second voltage

Art Unit: 2853

amplitude level being higher than the first voltage amplitude level, and a driver circuit for driving the electrothermal transducers in block units based upon the block selection signal and element driving signal from said logic circuit, which have the second voltage amplitude level, recited in apparatus claims 1, 6, 7, and 8. This invention solves the problem of providing a circuit arrangement in which a voltage for driving logic is converted to a voltage for driving elements without increasing the length of segments in a direction perpendicular to the array direction of the segments, while reducing pulse-amplitude converting circuits and reducing the number of elements formed on the substrate, thereby raising yield and simplifying circuit structure.

The prior art does not disclose, suggest or render obvious the combination of a inputting an input signal of a first voltage amplitude level, outputting a block selection signal and an element driving signal, which is for each electrothermal transducer in a selected block, at a second voltage amplitude level based upon the signal that has been input, the second voltage amplitude level being higher than the first voltage amplitude level, and driving the electrothermal transducers in block units based upon the block selection signal and element driving signal output from said logic circuit, which have the second voltage amplitude level, recited in method claim 5. This invention solves the problem of providing a circuit arrangement in which a voltage for driving logic is converted to a voltage for driving elements without increasing the length of segments in a direction perpendicular to the array direction of the segments, while reducing pulse-amplitude converting circuits and reducing the number of elements formed on the substrate, thereby raising yield and simplifying circuit structure.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art of Kishida et al. (US 5,172,134) discloses an inkjet recording head (Fig. 4A) and driving method having electrothermal transducer for generating thermal energy utilized to discharge ink a driver circuits for driving said electrothermal transducers, **but does not disclose** a logic circuit for outputting a block selection signal and an element driving signal, which is for each electrothermal transducer in a selected block, at a second voltage amplitude level based upon an input signal of a first voltage amplitude level, and a driver circuit for driving the electrothermal transducers in block units based upon the block selection signal and element driving signal from said logic circuit

### **Contact Information**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (571) 272-2153. The examiner can normally be reached on Flex.

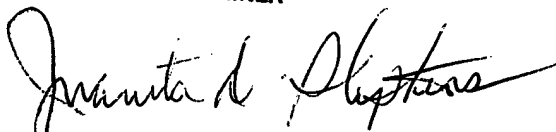
Art Unit: 2853

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**JUANITA D. STEPHENS**  
**PRIMARY EXAMINER**



JDS

January 23, 2007

Juanita D. Stephens  
Primary Examiner  
Art Unit 2853